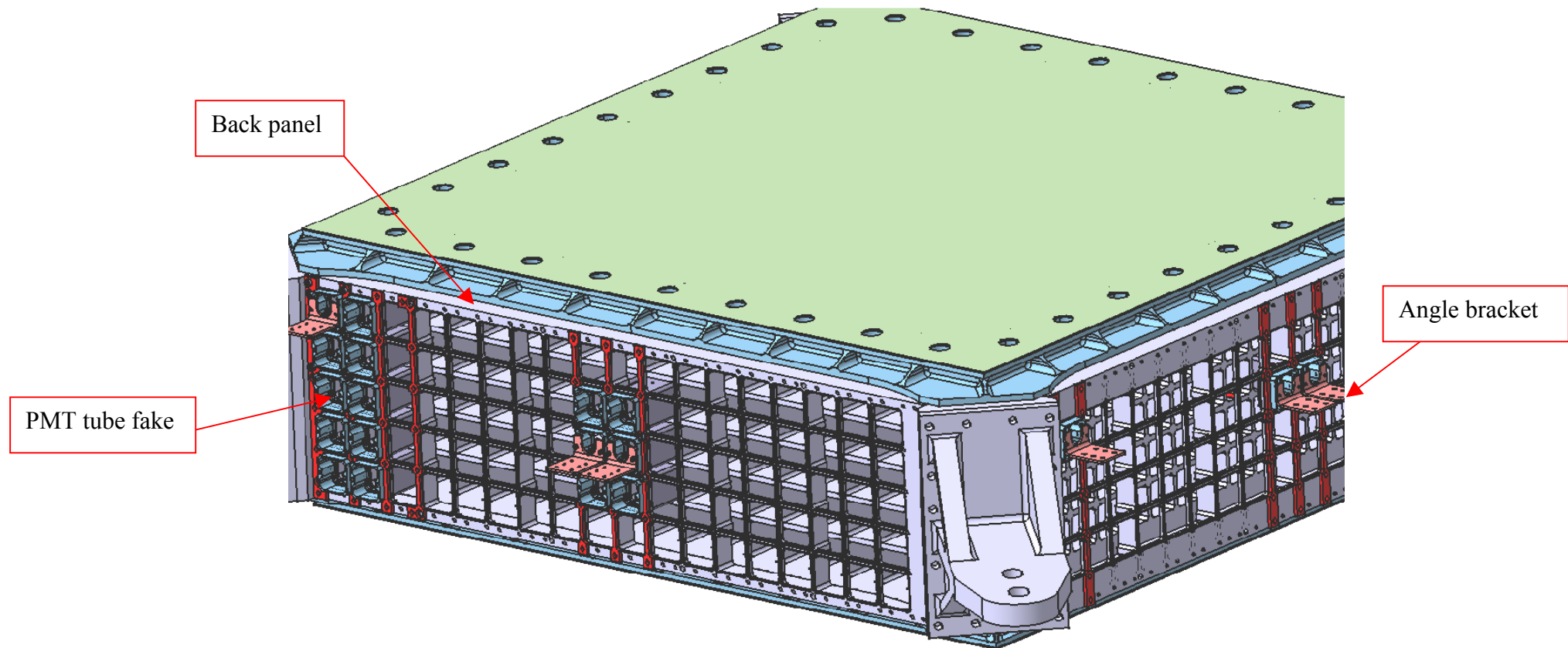


SPACE QUALIFICATION TESTS

OVERALL DESIGN ON *LIGHT COLLECTION SYSTEM ASSEMBLY*

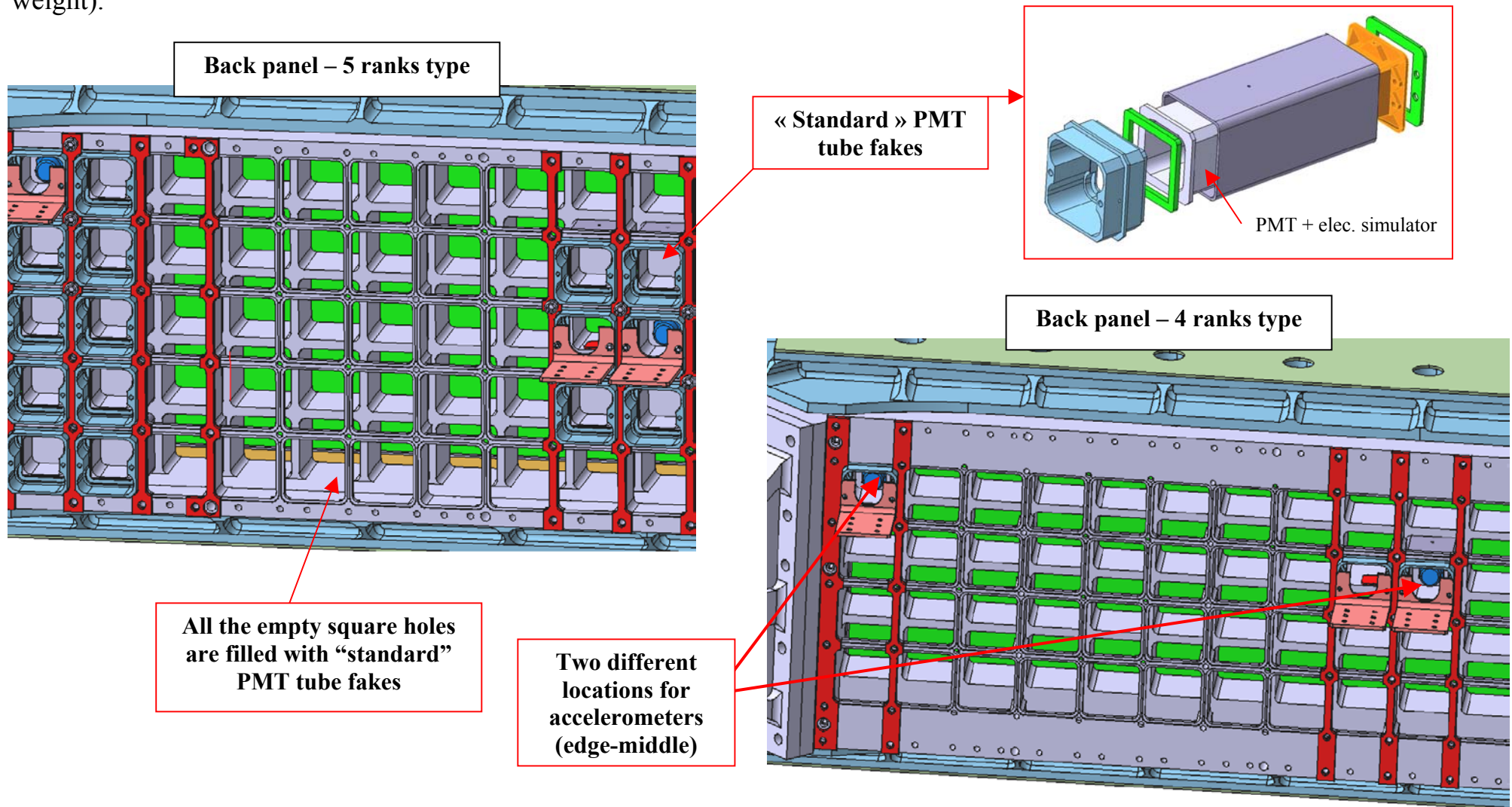


This includes the PMT Tube fakes, Back Panel interfaces, clamping systems, angle brackets to hold wires, accelerometers and strain gages locations. The aim of the document is to propose a solution for [accelerometers and gages integration through our Light collection system](#) assembled before the space qualification tests.

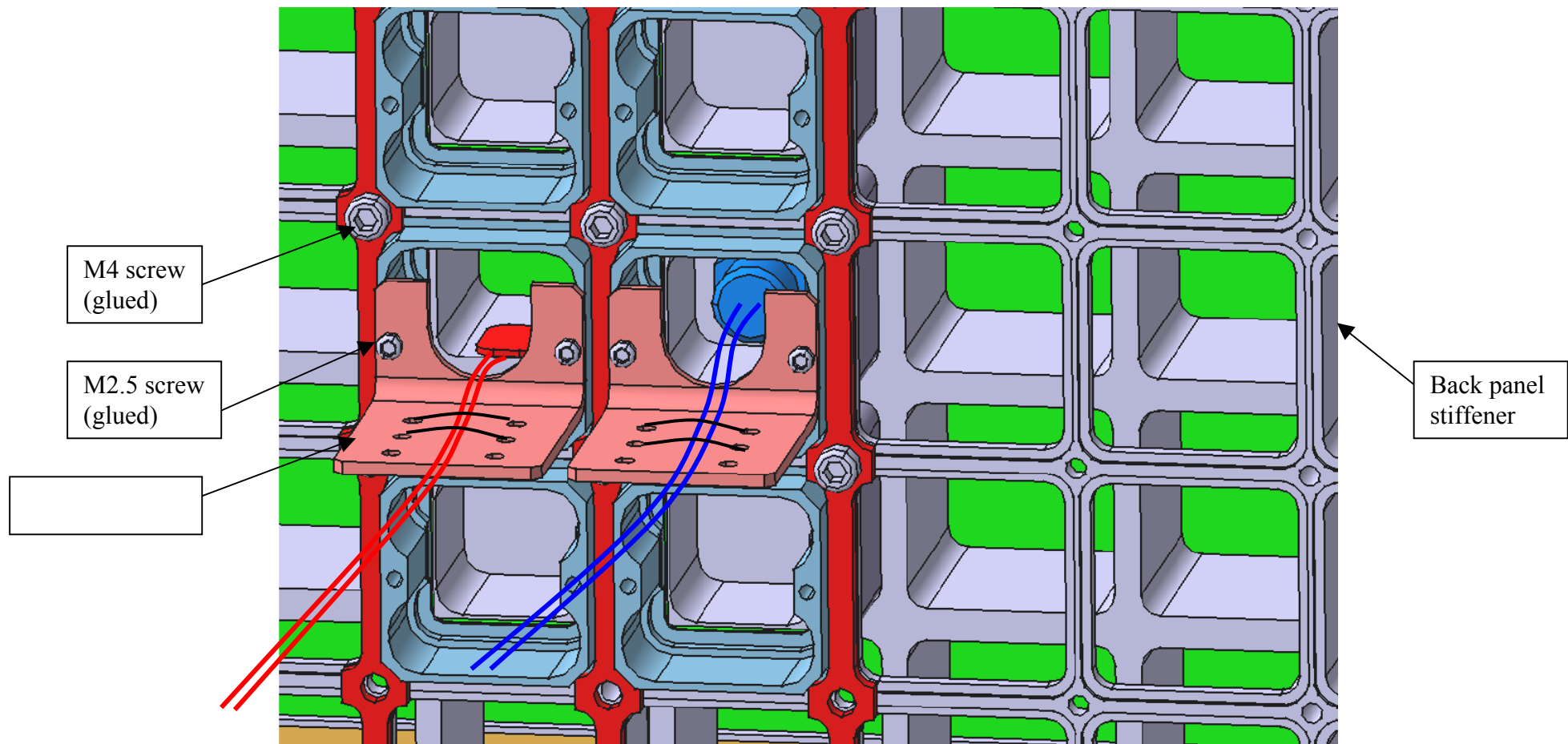
Why the need of accelerometers and gages?

It's mainly to study the response of PMT tubes with respect to vibrations (damping effect due to the use of different seals in our mounting) in different points (edge / middle of back panels). That's why we fix accelerometers inside the aluminium pieces which simulate both PMT and electronics (same dimensions and mass).

The use of strain gages is to measure the stresses in the lateral panels (located at the position where we want to save weight).



ZOOM on Accelerometer and gages integration



Note: In red colour we have the strain gage (on lateral panel “thin wall”)
In blue colour, the accelerometer fixed in the PMT+electronic fake.

In conclusion:

Number of sensors to be used ...

Strain gages :

2 gages glued on lateral panel “thin walls” (one for 4 ranks type, the other one for 5 ranks type).

1 gage glued on one Back panel stiffener if possible (see picture above). Stresses generated by the force of the 90 PMT tube fakes on the normal direction.

Accelerometers:

2 accelerometers located on two different points of the “5 ranks” side.

2 accelerometers located on two different points of the “4 ranks” side.

1 accelerometer attached to the back panel global movement if possible (global behaviour of the back panel)

TOTAL WEIGHT ADDED ON THE SUPPORT STRUCTURE : 64 Kg
